

Remarks:

Reconsideration of the application is requested.

Claims 1-17 are now in the application. Claims 2 and 15-16 have been amended. No new matter is believed to have been added.

In the second paragraph on page [2] of the above-identified Office action, claims 2, 15 and 16 have been rejected as being indefinite under 35 U.S.C. § 112, second paragraph.

Specifically, the Examiner summarily stated that claim 2 is apparently incorrect. Applicant amended claim 2 to correspond to the description (at page 16, lines 11 to 17). Accordingly, the dimensions of the source and drain zones in the lateral direction of the semiconductor body are smaller than the dimensions in the vertical direction of the semiconductor body.

The Examiner also stated that there was an insufficient antecedent basis for a term in claims 15-16. Claims 15-16 have been amended to refer to claim 4, thereby providing antecedent basis.

It is accordingly believed that the claims meet the requirements of 35 U.S.C. § 112, second paragraph. The above-noted changes to the claims are provided solely for cosmetic and/or clarificatory reasons. They are neither provided for overcoming the prior art nor do they narrow the scope of the claim for any reason related to the statutory requirements for a patent.

In the sixth paragraph on page [2] of the Office action, claim 1 has been rejected as being obvious over Reddi (U.S. Pat. No. 3,296,462) in view of Liu et al. (U.S. Pat. No. 6,097,061) (hereinafter, "Liu") under 35 U.S.C. § 103.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, inter alia, a semiconductor configuration, comprising:

a semiconductor body including a first connection zone of a first conductivity type, a second connection zone of the first conductivity type, a channel zone of the first conductivity type, at least one control electrode, and an insulation layer;

said channel zone of the first conductivity type being formed between said first connection zone and said second connection zone;

said semiconductor body defining a vertical direction and a lateral direction.

Accordingly, the semiconductor configuration includes a semiconductor body with a first connection zone of a first conductivity type, a second connection zone of the first conductivity type, a channel zone of the first conductivity type, and at least one control electrode surrounded by an insulation layer. The channel zone is formed between the first connection zone and the second connection zone. The at least one control electrode extends (adjacent the channel zone) from the first connection zone to the second connection zone.

The Reddi reference is directed to a MOS device having a tunable filter type gain response with insertion gain in the passband. However, the present invention differs from Reddi in that the gate electrode of the instant application extends in the vertical direction of the semiconductor body into the semiconductor body.



The Liu reference discloses a device structure (for a MOS circuit) including a trenched polysilicon gate. The trenched polysilicon gate is formed in a trench etched into the semiconductor substrate. The device structure also includes a source region, a drain region and a channel region, which is implanted in the substrate beneath the bottom surface of the trench. The top surface of the trenched polysilicon gate is substantially planar to the substrate surface.

Accordingly, Liu teaches a conventional MOSFET with a source zone 206, a drain zone 208, and a channel zone 204. It does not disclose that the channel zone 204 is doped complementary to the source zone 206 and to the drain zone 208.

Moreover, Liu illustrates (in Fig. 1) a MOS transistor with a channel zone 104, which is doped complementary to the source zone 106 and to the drain zone 108. Accordingly, Liu differs from the *present invention*, since the source zone, the drain zone and the channel zone of the configuration of the *present invention* have *the same conductivity type*.

Clearly, the references do not show "a semiconductor body including a first connection zone of a first conductivity type, a second connection zone of the first conductivity type, a channel zone of the first conductivity type, at least one control electrode, and an insulation layer; said channel zone

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of the first conductivity type being formed between said first connection zone and said second connection zone; said semiconductor body defining a vertical direction and a lateral direction", as recited in claim 1 of the instant application (emphasis added).

Further, a critical step in analyzing the patentability of claims pursuant to 35 U.S.C. § 103 is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. See In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher." Id. (quoting W.L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 313 (Fed. Cir. 1983)).

Most if not all inventions arise from a combination of old elements. See In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998). Thus, every element of a claimed invention may often be found in the prior art. See id. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the

whole claimed invention. See id. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the appellant. See In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 163.5, 1637 (Fed. Cir. 1998); In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases the nature of the problem to be solved. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. In addition, the teaching, motivation or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. See WMS Gaming, Inc. v. International Game Tech., 184 F.3d 1339, 1355, 51 USPQ2d 1385, 1397 (Fed. Cir. 1999). The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. See In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981) (and cases cited therein). Whether the Examiner relies on an express or an implicit showing, the Examiner must provide particular findings related thereto. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617.

Broad conclusory statements standing alone are not "evidence."

Id. When an examiner relies on general knowledge to negate patentability, that knowledge must be articulated and placed on the record. See In re Lee, 277 F-3d 1338, 1342-45, 61 USPQ2d 1430, 1433-35 (Fed. Cir. 2002).

Upon evaluation of the Examiner's response, it is respectfully believed that the evidence adduced by the Examiner is insufficient to establish a prima facie case of obviousness with respect to the claims. Accordingly, the Examiner is requested to withdraw the rejections.

Applicant believes that there is no teaching or suggestion in *the references* to incorporate the features of one another.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

Finally, Applicant acknowledges the Examiner's statement that claims 3-14 and 17 "would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims." In light of the above,

Applicant respectfully believes that rewriting of claims 3-14 and 17 is unnecessary at this time.

In view of the foregoing, reconsideration and allowance of claims 1-17 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, the Examiner is respectfully requested to telephone counsel so that, if possible, patentable language can be worked out.

Petition for extension is herewith made. The extension fee for response within a period of one month pursuant to Section 1.136(a) in the amount of \$110.00 in accordance with Section 1.17 is enclosed herewith.

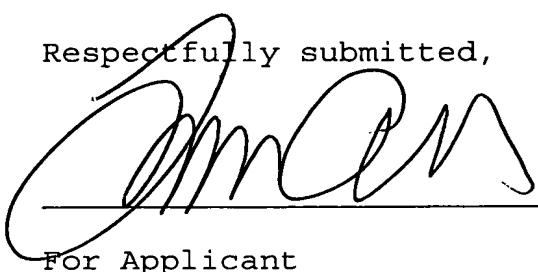
Please charge any fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and

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Greenberg, P.A., No. 12-1099.

Respectfully submitted,

LAURENCE A. GREENBERG
REG. NO. 29,308



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For Applicant

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VRP:cgm

November 25, 2002

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

Claim 2 (amended). The semiconductor configuration according to claim 1, wherein:

said first connection zone and said second connection zone define the lateral direction as extending from said first connection zone to said second connection zone;

at least one of said first and second connection zones has a first dimension in the vertical direction and a second dimension in the lateral direction; and

said [first] second dimension is smaller than said [second] first dimension.

Claim 15 (amended). The semiconductor configuration according to claim [1] 4, wherein said first dopant concentration is higher than 10^{18} cm⁻³.

Claim 16 (amended). The semiconductor configuration according to claim [1] 4, wherein said second dopant concentration is substantially $5 \times 10^{15} \text{ cm}^{-3}$.

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